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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,519	02/10/2004	Edward McCoy	18525/04071	1060
24024 7590 01/04/2007 CALFEE HALTER & GRISWOLD, LLP 800 SUPERIOR AVENUE SUITE 1400 CLEVELAND, OH 44114			EXAMINER SPAHN, GAY	
			ART UNIT 3635	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/775,519

Applicant(s)

MCCOY, EDWARD

Examiner

Gay Ann Spahn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the

(1) "passive capillary system for draining excess perched water from a golf green or athletic field, the golf green or athletic field being formed from a gravel layer and a sandy root zone layer arranged above the gravel layer in a horizontally layered soil profile, the golf green or athletic field being structured so that excess water passively drains from the gravel layer, the sandy root zone layer and gravel layer defining therebetween an interface above which perched water tends to accumulate due to capillary breakdown between the sandy root layer and the gravel layer, the passive capillary system comprising

multiple elongated porous drainage members positioned in the layered soil profile at spaced intervals to form an array in the putting green or athletic field, at least some of these elongated porous drainage members passing vertically downwardly beginning from within the sandy root layer and extending substantially into the gravel layer, thereby providing a substantially continuous porous pathway allowing excess perched water above the interface to passively drain out of the golf green or athletic field without application of a subatmospheric pressure to its gravel layer" (emphasis added) as specifically recited in claim 37,

(2) "golf green or athletic field has a contoured surface" (emphasis added) as specifically recited in claim 38,

(3) "at least some of the elongated porous drainage members comprise a fiberglass rope or fiberglass tape" (emphasis added) as specifically recited in claim 40,

(4) "fiberglass rope or fiberglass tape has a diameter of about 0.64 to 2.54 cm" (emphasis added) as specifically recited in claim 41,

(5) "at least some of the elongated porous drainage members are spaced about 24 inches (61 cm) from one another" (emphasis added) as specifically recited in claim 42,

(6) "at least some of the elongated porous drainage members extend about 100 mm into the sandy root zone layer" (emphasis added) as specifically recited in claims 43 and 53,

(7) "at least some of the elongated porous drainage members are inserted into the layered soil profile through pilot holes formed by driving one or more tines into the soil using a mechanical actuator" (emphasis added) as specifically recited in claim 44,

(8) "mechanical actuator is a hydraulic ram" (emphasis added) as specifically recited in claim 45,

(9) "at least some of the elongated porous drainage members are fiberglass ropes which are inserted into the pilot holes using a mechanical actuator" (emphasis added) as specifically recited in claim 46,

(10) "insertion of the fiberglass ropes into the pilot holes is facilitated by using a stiffening support means" (emphasis added) as specifically recited in claim 47,

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(11) "stiffening support means is selected from one or more of a small diameter wire, a plastic dowel, and a wooden dowel affixed along the axis of the fiberglass rope"

(emphasis added) as specifically recited in claim 48,

(12) "at least some of the elongated porous drainage members are inserted into the soil using a thin, reinforced metal plate" (emphasis added) as specifically recited in claim 49,

(13) "elongated porous drainage members are reversibly affixed to the reinforced metal plate and the assembly is driven into the soil using a mechanical actuator"

(emphasis added) as specifically recited in claim 50,

(14) "a supplemental drainage system for passively draining excess water from a field having a soil profile defined by gravel layer and a sandy root zone layer arranged above the gravel layer in a horizontally layered soil profile, the field being structured so that excess water drains from the gravel layer,

the passive capillary system comprising multiple elongated porous drainage members arranged in an array in the field, at least some of these elongated porous drainage members vertically spanning the interface between the sandy root zone layer and the gravel layer so that excess perched water can flow out of the sandy root zone layer, into the gravel layer and away from the field without application of subatmospheric pressure to the gravel layer" (emphasis added) as specifically recited in claim 51,

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 37, and 51-53 are objected to because of the following informalities:

(1) **Claim 37**, line 6 and lines 10-11, **claim 51**, line 7, **claim 52**, line 2, and **claim 53**, line 2, the recitation of "the sandy root layer" should be changed to --the sandy root zone layer-- (emphasis added) for clear antecedent basis;

(2) **Claim 37**, line 14, the recitation of "its gravel layer" should be changed to --the gravel layer-- for clear antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 50 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 50, lines 1-2, the recitation that “the elongated porous drainage members are reversibly affixed to the reinforced metal plate” is considered to constitute new matter as there is no support in the specification for the elongated porous drainage members being “reversibly” affixed to the reinforced metal plate.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 37-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 37, line 9, the recitation of “the putting green” is vague, indefinite, and confusing as lacking antecedent basis since it is not clear if this is referring to the “golf green” previously recited.

Claim 37, lines 9-10, the recitation of “at least some of these elongated porous drainage members” is vague, indefinite, and confusing and the examiner suggests amending by changing “these” to --the-- or --said--.

Claim 44, line 3, **claim 49**, line 2, and **claim 50**, line 2, the recitation of “the soil” is vague, indefinite, and confusing as lacking antecedent basis since no soil or soil layer has ever been defined.

Claim 50, line 2, the recitation of “reversibly affixed” is vague, indefinite, and confusing as it is not understood how the elongated porous drainage members are “reversibly affixed” to the reinforced metal plate.

Claim 50, line 2, the recitation of “the assembly” is vague, indefinite, and confusing as lacking antecedent basis.

Claim 51, line 3, the recitation of “a horizontally layered soil profile” is vague, indefinite, and confusing as lacking antecedent basis because it is not clear if this is meant to refer back to “a soil profile” recited in line 2.

Claim 51, line 5, the recitation of “the passive capillary system” is vague, indefinite, and confusing as lacking antecedent basis.

Claim 51, lines 5-6, the recitation of “at least some of these elongated porous drainage members” is vague, indefinite, and confusing and the examiner suggests amending by changing “these” to --the-- or --said--.

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Claim 51, line 8, the recitation of "the sandy root zone" is vague, indefinite, and confusing as lacking antecedent basis and should be changed to --the sandy root zone layer-- (emphasis added).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37-53 rejected under 35 U.S.C. 103(a) as being unpatentable over CUNNINGHAM (U.S. Patent No. 4,268,993) in view of KNUTSON ET AL. (Article in Vol. 58 of Soil Science Soc. Am. Journal, entitled "Unsaturated Hydraulic Conductivities of Fiberglass Wicks and Designing Capillary Wick Pore-Water Samplers", by J.H. Knutson and J.S. Selker, published in May-June 1994 issue, pages 721-729).

As to claim 37, CUNNINGHAM discloses a system for draining excess perched water from a golf green or athletic field (2), the golf green or athletic field (2) being formed from a gravel layer (64) and a sandy root zone layer (68) arranged above the gravel layer (64) in a horizontally layered soil profile, the golf green or athletic field (2) being structured so that excess water drains from the gravel layer (68), the sandy root zone layer (68) and gravel layer (64) defining therebetween an interface above which

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perched water tends to accumulate between the sandy root zone layer (68) and the gravel layer (64), the system comprising

multiple elongated porous drainage members (water level detector 42 - see col. 7, lines 41-43, wherein it states that "the water level detector 42 which can also act as a drainage means) positioned in the layered soil profile at spaced intervals to form an array (see Fig. 1) in the putting green or athletic field (2), at least some of these elongated porous drainage members (42) passing vertically downwardly (see Fig. 2) beginning from within the sandy root zone layer (68) and extending substantially into the gravel layer (64), thereby providing a substantially continuous porous pathway allowing excess perched water above the interface to passively drain out of the golf green or athletic field (2) without application of a subatmospheric pressure to its gravel layer (64).

However, CUNNINGHAM fails to explicitly disclose a passive capillary system.

KNUTSON ET AL. discloses a passive capillary system (see Fig. 1) comprising multiple elongated porous drainage members (wicks in tubing) positioned in the layered soil profile at spaced intervals to form an array in the putting green or athletic field, at least some of these elongated porous drainage members passing vertically downwardly beginning from within the sandy root layer and extending substantially into the gravel layer, thereby providing a substantially continuous porous pathway allowing excess perched water above the interface to passively drain out of the golf green or athletic field without application of a subatmospheric pressure to its gravel layer. (KNUTSON ET AL. discloses the use of Passive Capillary Samplers (PCAPS) using "hanging

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fiberglass wicks, which develop capillary tension, to draw pore-water samples from soils Fig. 1" which is a desirable sampling method having the advantage over other sampling techniques of not requiring vacuum pumps or other suction equipment because PCAPS use the natural capillary potential of porous wicks to passively draw water from the unsaturated soil matrix across a range of pressures (see first paragraph after Abstract on page 721)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the drainage system of CUNNINGHAM by replacing the drainage means (42) with the hanging (vertical) fiberglass wick system of KNUTSON ET AL. in order to extend a plurality of hanging fiberglass wicks from the root zone layer through the gravel layer so as to use the natural capillary potential of the porous wicks the passively draw water from the soil matrix instead of disadvantageously having to use a pumping system to draw water.

As to claim 38, CUNNINGHAM in view of KNUTSON ET AL. discloses the passive capillary system of claim 37 as discussed above, and CUNNINGHAM also discloses that the golf green or athletic field (2) has a contoured surface.

As to claim 39, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 37 as discussed above, and both CUNNINGHAM and KNUTSON ET AL. also disclose that at least some of the elongated porous drainage members (42 in Fig. 2 of CUNNINGHAM; wicks in Fig. 1 of KNUTSON ET AL.) are substantially vertically oriented.

As to claim 40, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 39 as discussed above, and KNUTSON ET AL. also discloses that at least some of the elongated porous drainage members comprise a fiberglass rope or fiberglass tape (see page 721, lines 6-7 of paragraph in first column beginning "Many studies . . ." and lines 1-2 of last paragraph in second column).

As to claim 41, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 40 as discussed above, and KNUTSON ET AL. also discloses that the fiberglass rope or fiberglass tape has a diameter of about 0.64 to 2.54 cm (see Table 1, wherein wick diameters of 1" (2.54 cm), ½", 3/8", and ¼" (0.64 cm) are discussed).

As to claim 42, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 39 as discussed above.

Neither CUNNINGHAM nor KNUTSON ET AL. explicitly discloses that at least some of the elongated porous drainage members are spaced about 24 inches (61 cm) from one another.

However, it is well settled that changes in size/proportion (i.e., dimension) do not constitute a patentable difference. In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

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It would have been an obvious expedient for one of ordinary skill in the art at the time the invention was made to modify the system for draining fluid from a layered soil profile of CUNNINGHAM in view of KNUTSON ET AL. by spacing the drainage members at a distance of about 24 inches or 61 cm from each other in order to have the optimum design for draining the most water since dimensions do not constitute a patentable difference.

As to claim 43, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 39 as discussed above.

Neither CUNNINGHAM nor KNUTSON ET AL. explicitly disclose that at least some of the elongated porous drainage members extend about 100 mm into the sandy root zone layer.

However, it is well settled that changes in size/proportion (i.e., dimension) do not constitute a patentable difference. In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

It would have been an obvious expedient for one of ordinary skill in the art at the time the invention was made to modify the system for draining fluid from a layered soil profile of CUNNINGHAM in view of KNUTSON ET AL. by making at least some of the elongated porous drainage members extend about 100 mm into the sandy root zone

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layer in order to have the optimum design for draining the most water since dimensions do not constitute a patentable difference.

As to claim 44, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 39 as discussed above.

Neither CUNNINGHAM nor KNUTSON ET AL. explicitly disclose that at least some of the elongated porous drainage members are inserted into the layered soil profile through pilot holes formed by driving one or more tines into the soil using a mechanical actuator.

However, the recitation that “at least some of the elongated porous drainage member are inserted into the layered soil profile through pilot holes formed by driving one or more tines into the soil using a mechanical actuator” is nothing more than a method limitation which effectively defines the product in terms of a process (i.e., product-by-process claim, wherein it is the product, not the process which is being claimed).

Since CUNNINGHAM in view of KNUTSON ET AL. discloses the final product being claimed, claim 44 is met by the combination of CUNNINGHAM in view of KNUTSON ET AL.

As to claim 45, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 44 as discussed above.

Neither CUNNINGHAM nor KNUTSON ET AL. explicitly disclose that the mechanical actuator is a hydraulic ram.

However, the recitation that “the mechanical actuator is a hydraulic ram” is nothing more than a method limitation which effectively defines the product in terms of a process (i.e., product-by-process claim, wherein it is the product, not the process which is being claimed).

Since CUNNINGHAM in view of KNUTSON ET AL. discloses the final product being claimed, claim 45 is met by the combination of CUNNINGHAM in view of KNUTSON ET AL.

As to claim 46, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 44 as discussed above.

Neither CUNNNINGHAM nor KNUTSON ET AL. explicitly disclose that at least some of the elongated porous drainage members are fiberglass ropes which are inserted into the pilot holes using a mechanical actuator.

However, the recitation that “at least some of the elongated porous drainage members are fiberglass ropes which are inserted into the pilot holes using a mechanical actuator” is nothing more than a method limitation which effectively defines the product in terms of a process (i.e., product-by-process claim, wherein it is the product, not the process which is being claimed).

Since CUNNINGHAM in view of KNUTSON et al. discloses the final product being claimed, claim 46 is met by the combination of CUNNINGHAM in view of KNUTSON ET AL.

As to claim 47, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 46 as discussed above.

Neither CUNNINGHAM nor KNUTSON ET AL. explicitly disclose that insertion of the fiberglass ropes into the pilot holes is facilitated by using a stiffening support means.

However, the recitation that "insertion of the fiberglass ropes into the pilot holes is facilitated by using a stiffening support means" is nothing more than a method limitation which effectively defines the product in terms of a process (i.e., product-by-process claim, wherein it is the product, not the process which is being claimed).

Since CUNNINGHAM in view of KNUTSON ET AL. discloses the final product being claimed, claim 47 is met by the combination of CUNNINGHAM in view of KNUTSON ET AL.

As to claim 48, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 47 as discussed above.

Neither CUNNINGHAM nor KNUTSON ET AL. explicitly disclose that the stiffening support means is selected from one or more of a small diameter wire, a plastic dowel, and a wooden dowel affixed along the axis of the fiberglass rope.

However, the recitation that "the stiffening support means is selected from one or more of a small diameter wire, a plastic dowel, and a wooden dowel affixed along the axis of the fiberglass rope" is nothing more than a method limitation which effectively defines the product in terms of a process (i.e., product-by-process claim, wherein it is the product, not the process which is being claimed).

Since CUNNINGHAM in view of KNUTSON ET AL. discloses the final product being claimed, claim 48 is met by the combination of CUNNINGHAM in view of KNUTSON ET AL.

As to claim 49, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 39 as discussed above.

Neither CUNNINGHAM nor KNUTSON ET AL. explicitly disclose that at least some of the elongated porous drainage members are inserted into the soil using a thin, reinforced metal plate.

However, the recitation that “at least some of the elongated porous drainage members are inserted into the soil using a thin, reinforced metal plate” is nothing more than a method limitation which effectively defines the product in terms of a process (i.e., product-by-process claim, wherein it is the product, not the process which is being claimed).

Since CUNNINGHAM in view of KNUTSON ET AL. discloses the final product being claimed, claim 49 is met by the combination of CUNNINGHAM in view of KNUTSON ET AL.

As to claim 50, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 49 as discussed above.

Neither CUNNINGHAM nor KNUTSON ET AL. explicitly disclose that the elongated porous drainage members are reversibly affixed to the reinforced metal plate and the assembly is driven into the soil using a mechanical actuator.

However, the recitation that “the elongated porous drainage members are reversibly affixed to the reinforced metal plate and the assembly is driven into the soil using a mechanical actuator” is nothing more than a method limitation which effectively defines the product in terms of a process (i.e., product-by-process claim, wherein it is the product, not the process which is being claimed).

Since CUNNINGHAM in view of KNUTSON ET AL. discloses the final product being claimed, claim 50 is met by the combination of CUNNINGHAM in view of KNUTSON ET AL.

As to claim 51, CUNNINGHAM discloses a supplemental drainage system (see Figs. 1 and 2) for draining excess water from a field (2) having a soil profile defined by gravel layer (64) and a sandy root zone layer (68) arranged above the gravel layer (64) in a horizontally layered soil profile (Fig. 2), the field (2) being structured so that excess water drains from the gravel layer (64),

the system comprising multiple elongated porous drainage members (water level detector 42 - see col. 7, lines 41-43, wherein it states that “the water level detector 42 which can also act as a drainage means) arranged in an array (see Fig. 1) in the field (2), at least some of these elongated porous drainage members (42) vertically spanning (see Fig. 2) the interface between the sandy root zone layer (68) and the gravel layer (64) so that excess perched water can flow out of the sandy root zone layer (68), into the gravel layer (64) and away from the field (2) without application of subatmospheric pressure to the gravel layer (64).

However, CUNNINGHAM fails to explicitly disclose a passive capillary system.

KNUTSON ET AL. discloses a passive capillary system (see Fig. 1) comprising multiple elongated porous drainage members (wicks in tubing) arranged an array in the field, at least some of these elongated porous drainage members vertically spanning the interface between the sandy root zone layer and the gravel layer so that excess perched water can flow out of the sandy root zone layer, into the gravel layer and away from the field without application of a subatmospheric pressure to its gravel layer.

(KNUTSON ET AL. discloses the use of Passive Capillary Samplers (PCAPS) using "hanging fiberglass wicks, which develop capillary tension, to draw pore-water samples from soils Fig. 1" which is a desirable sampling method having the advantage over other sampling techniques of not requiring vacuum pumps or other suction equipment because PCAPS use the natural capillary potential of porous wicks to passively draw water from the unsaturated soil matrix across a range of pressures (see first paragraph after Abstract on page 721)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the drainage system of CUNNINGHAM by replacing the drainage means (42) with the hanging (vertical) fiberglass wick system of KNUTSON ET AL. in order to extend a plurality of hanging fiberglass wicks from the root zone layer through the gravel layer so as to use the natural capillary potential of the porous wicks the passively draw water from the soil matrix instead of disadvantageously having to use a pumping system to draw water.

As to claim 52, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 53 as discussed above, and CUNNINGHAM also discloses that the

upper ends (see Fig. 2) of the vertically-spanning elongated porous drainage members (42) are received in lower portions (see Fig. 2) of the sandy root layer (68).

As to claim 53, CUNNINGHAM in view of KNUTSON ET AL. discloses the system of claim 52 as discussed above.

Neither CUNNINGHAM nor KNUTSON ET AL. explicitly disclose that at least some of the elongated porous drainage members extend about 100 mm into the sandy root zone layer.

However, it is well settled that changes in size/proportion (i.e., dimension) do not constitute a patentable difference. In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

It would have been an obvious expedient for one of ordinary skill in the art at the time the invention was made to modify the system for draining fluid from a layered soil profile of CUNNINGHAM in view of KNUTSON ET AL. by making at least some of the elongated porous drainage members extend about 100 mm into the sandy root zone layer in order to have the optimum design for draining the most water since dimensions do not constitute a patentable difference.

Response to Arguments

Applicant's arguments with respect to new claims 37-53 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gay Ann Spahn whose telephone number is (571)-272-7731. The examiner can normally be reached on Monday through Thursday, 8:30 am to 7:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Naoko N. Slack can be reached on (571)-272-6848. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

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